



UNITED STATES DEPARTMENT OF COMMERCE  
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EXAMINER

ART UNIT PAPER NUMBER

27

2041

DATE MAILED: 03/28/01

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 1/17/01 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☒ Notice of Art Cited by Applicant, PTO-1449. 25, 4 pages
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ \_\_\_\_\_

Part II SUMMARY OF ACTION

1. ☒ Claims 13-131 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☒ Claims 115, 116, 123-131 are allowed.
4. ☒ Claims 113, 114, 117-122 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☒ The proposed drawing correction, filed 1/17/01, has been ☐ approved; ☒ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to by the examiner for improper cross hatching. All the parts shown in section should be cross hatched according to MPEP 608.02, page 600-81.

The drawings are also objected to because those figures showing that which is old are **not** labeled with a prior art legend. Such a label is required. See, for example, the brief description of figure 1a.

Also, the embodiment of the invention claimed is not shown in the drawings and explained in the detailed description of the invention. An illustration and explanation are required. Please note that all of the features of the elected invention should be shown in a single embodiment. In response to applicant's traversal that figure 8 discloses all of the features, examiner points out that paper #9 elects the species of figures 18, 19 and 21 with the contact of figure 15. One of these figures must contain all of the claimed features or the election changed.

The drawing corrections received 1/17/01 are not approved (therefore, none of the changes are entered). The pattern of cross hatching for the insulating parts (for example substrate 10) is incorrect. All of the insulating parts have been cross hatched as metal. When submitting drawing corrections, please include all of the corrections in a single set of marked-up drawings.

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of

which applicant may become aware in the specification.

*Treatment of Claims Based on Prior Art*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 113-114, 117-122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walraven et al. (US 3188535, hereafter Walraven).

Walraven discloses a terminal (4) of a semiconductor (column 1, lines 11-13) attached directly to a resilient interconnection element having an elongated section, a tip and a the claimed shape. The interconnection element comprises precursor (6) and overcoat (7). The tip is releasable because it is capable of being disconnected.

Moroney discloses springable contact (16) in direct contact with semiconductor device (11).

Walraven does not disclose a plurality of contacts or that the semiconductor has a plurality of microelectronic components. Nevertheless, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to include a plurality of microelectronic components to have the added functionality and to use a plurality of contacts to make connections to those microelectronic components, because integrating multiple components into a semiconductor device is well known in the art. Examiner takes official notice of the commonness of integrating multiple components into a semiconductor device.

5. Claim 113, 117-122 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moroney (US 3189799).

Moroney discloses a plurality of springable interconnection elements (16), having a releasable tip, an elongated portion and the claimed shape, in direct contact with semiconductor device (11).

Moroney does not disclose that the semiconductor has a plurality of microelectronic components. Nevertheless, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to include a plurality of microelectronic components to have the added functionality, because integrating multiple components into a semiconductor device is well known in the art. Examiner takes official notice of the commonness of integrating multiple components into a semiconductor device.

#### *Allowable Subject Matter*

6. Claims 115-116 and 123-131 are allowed.

The prior art does not disclose the contacts with the claimed shape and claimed layer structure (for example, the overcoat providing the resiliency) being formed directly on a semiconductor die.

#### *Response to Arguments*

7. Applicant's arguments have been carefully reviewed, but are moot in view of the new grounds of rejection. Nevertheless, examiner notes the following in response to applicant's arguments.

Ashby and goldman disclose gold contacts and do not disclose that the contacts are resilient. Nevertheless, Walraven disclose resilient contacts. If the contacts are resilient, then they are springable by definition. Even though, the circuit element disclosed by Walraven is a diode and maybe larger than current integrated circuits, miniaturization of contacts is well known and routinely

practiced. Therefore, examiner finds without support the allegation that Walraven "is irrelevant to the instant invention," page 12 of the response of 1/17/01.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Closing***

9. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Examiner Kamand Cuneo at (703) 308-1233. Examiner Cuneo's supervisor is Mr. Jeffrey Gaffin whose telephone number is (703) 308-3301.



K. Cuneo  
Patent Examiner, Group 2841  
March 23, 2001

